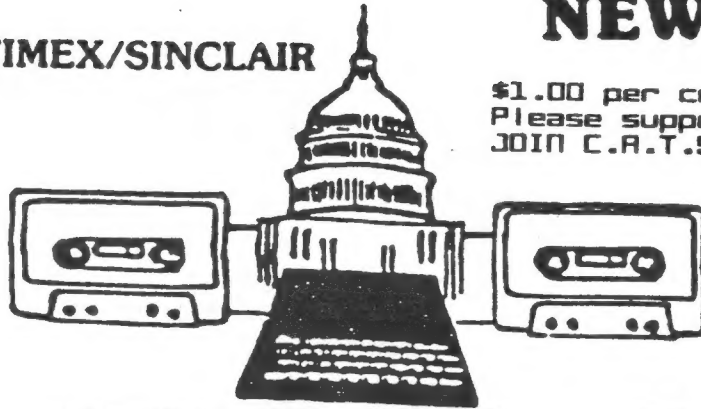


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Volume 5, Number 11

March, 1988



**COMPUTERFEST ISSUE**

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 Peter van Dijk  
 John Riley  
 Vernon Smith  
 Mark Fisher

**PRESIDENTIAL RAMBLINGS**

This month, and in fact, concurrent with this meeting, the Computerfest will be held in Orlando. Since I will be there, Hank will preside over the meeting. I'll have a full report on the "Fest" in the next newsletter.

**3½" DRIVES ARE A BUST**

The 3½ 1.44 meg drives don't work as 1.44 meg drives on the QL they do work as 720K drives though, but they are very expensive for that purpose. I recommend that the 5¼" drives be used as presently 95% of those enthusiasts using Timex/Sinclair computers are using them. The price is \$67+p&h. Cases and power supplies are \$45+p&h. The buy time is now!!

**A PERFECT QL CLOCK?**

In a recent issue of Quanta, Tony Teby reported on the State of QL battery backed clocks. He stated that they all worked, but the QL could trash it regardless of the protection mechanism. In speaking and confirming the problem with Jerry Chamkis at Aerco, we feel that we have come up with a fix on the 68008 chip. News at 11:00. (When I can proof it, I'll report further on it.)

*Tom*

# FROM THE EDITOR

This issue is an editor's dream in that all I had to do was "paste it up." Our own members, for the second month in a row, have submitted all of the articles in the issue. To my way of thinking, this is what we're looking for in the group, everyone pulling their weight. I realize that not everyone is involved, but if one or two new contributors come forward each month, everyone will soon become involved.

Checkout the information on page 3. CATS members should be thinking about getting involved with the Timex/Sinclair Computerfest in May. Everyone should be excited about having a 'Fest in our own backyard, especially when it is sponsored by Sharp's, THE QL dealer, and Zebra Systems, the biggest 2068 dealer in the East, if not the US. At this time the exact location is uncertain but, since it will be in the New York/New Jersey area, it can't be much more than a 5 hour drive. That sure beats a 16-20 hour trip to Orlando. I'm looking forward to meeting the "real gurus" and hopefully exchanging newsletter tips with the other editors.

Note also the obituary notice for Quantum Computing. If you have money in the pipeline, ACT QUICKLY TO GET IT BACK. If you have been billed on your credit card and haven't received the goods, call your credit card company IMMEDIATELY. Two years ago, I got burned for \$300 when Ramex folded. By the time I found out, the time period for credit card recovery had expired.

Now, what's inside. Mark Fisher has two articles. First, a boot program to insure that you have to do the minimum amount of work to get everything started. Second, a fun program that investigates the Stipple function and probably will amaze your non-Sinclair friends.

Peter van Dijk has another plotter routine. What I like about his programs is that a plotter is optional since they can also be drawn to the screen. Did you ever wonder where John Riley went and what he's doing? Down in the land of cotton and hacking away, it appears. John has been adding a Larken system to his 2068 and in this issue he tells us how.

Well, thanks for the support and keep it coming. Who knows? I'm getting to like it so much, I might stay for a few more issues.

*DeMora*

## march meeting agenda

11:00 HARDWARE WORKSHOP

2:00 GENERAL MEETING

Available Discussion

QL tips, problems, & gripes

4:45 ADJOURN

MEMBERS ARE REQUESTED TO  
PARK ON THE STREET OR  
IN THE MARY BRENT SCHOOL  
LOT (SEE DEC N/L). LEAVE  
LIBRARY LOT FOR PATRONS.

## NEWSLETTER SUBMISSIONS

Submissions for the newsletter can be in hard copy, with columns 35 characters wide, or, preferably, magnetic media. For the QL, microdrive cartridge, 5 1/4" DS/DD or Quad density disks, or 3 1/2" disks. For the 2X81, TS1000, or 2068, cassettes only, with titles on the box.

Send material to:  
Editor, CATS Newsletter  
Box 467  
Fairfax Station, VA 22039

**CATS 2 MARCH**

# POT POURRI

News Around the Beltway

## NY/NEW JERSEY AREA 'FEST TO BE HELD IN MAY

**Did you miss the Fest in Orlando?  
Cheer up, another one's coming in  
May!**

Late word has it that Sharp's and Zebra Systems will co-host a computer fest in May in the New York/New Jersey area. Those that couldn't get to Orlando because of the distance (a 2 day drive from DC), should be able to make it. What is so intriguing about this fest is that it is being sponsored by the largest QL and 2068 dealers in the US. I'm sure many CATS members will be able to get to this one. By the time the next newsletter comes out, we should have a date and a location.

**WATCH THIS SPACE**

## ANOTHER ONE BITES THE DUST QUANTUM COMPUTING GOES UNDER

**QUANTUM COMPUTING** has closed its doors for good. Their stock is up for sale. I hear that it consists only of books since hardware and software was obtained only after an order was received.

**NOTICE NOTICE**

CATS members who are waiting for purchases from Quantum Computing should check on their status IMMEDIATELY.

## Letters to the Editor

This letter is not the usual up-beat type that usually is printed in newsletter columns, but I hope you will print it anyway.

After many months of frustration and agonizing, I have come to the conclusion that the QL is dead, just like the 2068. The brain just doesn't know the heart has stopped beating. Take software support. Virtually none is being done in the US, so we must depend on England, unfortunately. Software is developed with the UK user in mind, with hardly a thought given to the inputs or desires of "those in the colonies". My letters to most dealers/developers go unanswered. Digital Precision sends me a catalog of their software! Ever try to phone DP? Forget it or talk to their "machine". Customer service is almost nonexistent. For example: I sent to QL World for some keyboard chips. The fools returned my check --it seems this "big" magazine can't cash a check in US dollars-- by UK domestic surface mail which took 2 months to reach me and arrived with 75 cents POSTAGE DUE! Strong Computers sent me a letter the same way. It took TWO phone calls to get them to return an item I sent for repair. On the first call, they said it had been shipped. A month later, after another call, it is ACTUALLY sent. And Strong is supposed to be one of the best. Sort of makes you wonder, doesn't it? My phone bill is looking like the Federal deficit.

Hardware is no better despite the valiant struggle of guys like Tom Bent to overcome the flaky thinking and practices of the UK hardware developers. Ask Tom what CST did to their SCSI hard disk interface and remember that SCSI is a STANDARD. Despite its capability to be used in a variety of sophisticated applications, the QL is still being treated as a "hacker's" machine.

I'm no newcomer on the scene. I've had a 1000, 2068, and a QL, but I feel that I'm fighting a no-win battle. To my way of thinking, that's not what computing is all about. Forgive me for saying it, but I'm seriously thinking about surrendering. I want support and responsiveness. I don't want to make any more international calls and I want timely responses by mail. Thanks for the experience. It was fun while it lasted.

**B. B. B.**

Letters continued on page 9

**DON'T FORGET: THE MARCH MEETING IS ON THE 5<sup>TH</sup>**

**CATS 3 MARCH**

# the PLOTTER: Tips and programs for the plotter user

by Peter van Dijk

This program prints fancy patterns to the screen or to the EPSON HI-80 plotter. The patterns are based on CYCLOIDS, or the movements of a point on a spoke of a wheel turning within another wheel. An unlimited number of different patterns can be drawn by changing one or more parameters of the procedure PATTERN. A few examples are:

16	525	420	410	-20	7
13	600	400	370	-30	0
1	750	510	255	-30	25
1	540	280	240	0	0
1	505	95	90	10	-10

Values 2, 3 and 4 should be selected in such a way that the pattern fits into the window. If values 2 and 3 have mostly common factors, one cycle of the procedure CYCLOID ends quickly (600 and 400 in example 2), if less common factors are used, it takes a lot longer (505 and 95 in the last example).

Lines 760 to 1010 are not required if this program will only be used for screen plotting.

Two more procedures are included in the program, although they have no relation with pattern drawing. These procedures are LONG\_PLOT and PLOT\_FILE.

LONG\_PLOT shows how to plot strips longer than the maximum paper size for the EPSON plotter. The trick is to plot the maximum page size first, then initialise the plotter with the IN command, set the defaults, move to where the first plot stopped and continue from there. I use fan-fold paper to plot long graphs in this manner. The procedure gives an example, showing an extended grid.

PLOT\_FILE shows how plotter output can be redirected to a file on disk, and plotted by copying the file to

SER. In this procedure LONG\_PLOT is used as a program that sends its output to the file SCREEN\_PLT. The file can be plotted as many times as required, without running the program.

```

100 CHOISE: DRAW
110 REMark *****
120 DEFine PROCedure CHOISE
130 CLS: AT 10,20: PRINT '0) OUTPUT TO
PLOTTER'
140 PRINT TO 20, '1) OUTPUT TO
SCREEN'
150 PRINT: INPUT TO 20, 'PRESS 0 OR 1
'; V
160 IF V
170 WINDOW 512,202,0,0 : CLS
180 SCALE 1000,-800,-500
190 ELSE
200 C=3: OPEN#C, SER
210 CLS: AT 10,20: PRINT 'PLOTTING...'
220 MA 1255,960: OR1
230 END IF
240 END DEFine CHOISE
250 REMark *****
260 DEFine PROCedure DRAW
270 REPEAT LOOP
280 CLS: AT 10,20
290 PRINT 'INPUT OF PARAMETERS "0"
TO END': PRINT
300 INPUT TO 20, 'NUMBER OF CALLS TO
<CYCLOID> : '; LEVEL
310 IF LEVEL=0: EXIT LOOP: CLOSE#C: END
IF
320 INPUT TO 20, 'RADIUS OF FIXED
CIRCLE : '; R1
330 INPUT TO 20, 'RADIUS OF MOVING
CIRCLE : '; R2
340 INPUT TO 20, 'PEN RELATIVE TO
MOVING CIRCLE : '; R3
350 INPUT TO 20, 'RATE OF CHANGE IN
R3 : '; R3_I
360 INPUT TO 20, 'STEP IN ANGLE OF
FIXED CIRCLE : '; A_I
370 PATTERN
LEVEL, R1, R2, R3, R3_I, A_I, A1_I
380 END REPEAT LOOP
390 IF NOT FLAG: CH: END IF
400 END DEFine DRAW
410 REMark *****
420 DEFine PROCedure
PATTERN(LEVEL, R1, R2, R3, R3_I, A_I)
430
CLS: A=0: A1_I=PI/36: A2_I=R1*A1_I/R2
440 CR=R1-R2: A_I=RAD(A_I)
450 FOR I=1 TO LEVEL

```

Continued on Page 10

## A STREAMLINED BOOT by Mark Fisher

Introduction: What's a BOOT?

There are a lot of messy little details that need to be straightened out before you can use one of the application programs that is included with the QL. But, you say, I haven't ever had to do anything more than press F1 to get to Quill. You're right, of course - the messy work has been automatically done by a program named BOOT. The name is important: The QL searches the current directory upon start-up for that name. If it finds it, the QL will automatically execute whatever commands it contains. As supplied with the QL, the BOOT programs with the Psion suite generally set up window sizes and load the machine code into the proper locations. If you wish, however, you can extend the functions of the BOOT program. One possibility is discussed below.

Operation: What's this BOOT?

Here's an application of the Toolkit II's CLOCK function. If Toolkit II has been installed in your QL, it will automatically date-stamp files as they are saved - but the clock has to be set. This BOOT program will allow you to set both the date and the clock, as well as offering you an alarm if you'll need to blow the joint at a certain time. Unlike the date setting routines in IBM machines, you can short-cut the entire business if you wish. In addition, there is no required separator between fields, as long as you are consistent within each entry.

The program's operation is straightforward. After setting up the screen and titles (100-150), it prompts for a date. If you press ENTER at this point, it will skip directly to the program loading sequence (you might want to do this if you just QUIT from another Psion program and had already set the clock). If you have entered a date,

it will first evaluate your entry to find what separator you used, then divide your entry into the values for day, month, and year. The sequence is repeated for time setting and alarm setting as well. When these are completed, the program loading steps are executed (350-370).

Upon QUITting the program, don't reset the machine: Just type LRUN BOOT to load the next program and preserve the clock settings.

While the listing below would seem to be specific to Quill, it can be easily modified to work with the other Psion programs. I'll insert comments that will let you know how to adapt this to the other programs.

One caution: this program is considerably longer than the original BOOT, and the QL doesn't delete the BASIC when it goes to the machine code programs. Thus, you'll lose some RAM space when you use this BOOT routine. I think you'll agree that the convenience is worth the cost.

```
100 CLEAR
110 OPEN #1,
con_512x256a0x0_10:CSIZE 2,1:CLS
```

This line ensures that INPUT commands will operate correctly, even if you have just QUIT from a previous Psion program.

```
120 AT 1,10:PRINT "LOADING QL
T-QUILL+"
130 AT 3,13:PRINT "version ";2.3;
140 AT 4,6:PRINT "copyright 1984
PSION LTD"
150 AT 6,11:PRINT "word processing"
```

The first few lines (120 - 150) are specific to the particular program. They have been lifted from the BOOT program supplied with the programs - with a change in the PRINT locations to condense the titles and leave room for the time and date-setting routines.

Continued on Page 9

# Larken Electronics' LKDOS

The Last and Best Hardware for  
Your 2068 by John Riley

A year ago I had made up my mind that I had maximized my 2068 system. G. Russell's Romswitch gave me access to the richness of British Spectrum software. The Aerco printer interface had allowed me to use a full-sized printer. A "recycled" Westridge modem hooked me up to the outside world. The Aerco FD-68 Disk Interface gave me mass storage, RGB output, and 64K of additional memory that nobody could give me any practical way to use. The only thing that I wanted and didn't have was disk storage for my Spectrum software, which Aerco promised but never delivered. So I resigned myself to cassette storage for the rest of my life, and always thought twice before acquiring much Spectrum software for this reason.

Then came the tantalizing rumor that Canadian hardware wizard Larry Kenny had developed a 2068 disk interface that was Spectrum compatible, had a Kempston joystick interface, extended Basic, and a pushbutton "snapshot" NMI save. The cost was some \$80 less than the Aerco interface, but I was not thrilled with the idea of throwing my investment in the Aerco system out the window, nor did I relish the thought of having to convert my rather large disk library to a new DOS. So I stayed with what I had, while the Larken interface (LARRY + KENNY, get it?) gained a great deal of popularity among Canadian users, and made some inroads into the U.S. among those who had not already committed themselves to Aerco or Oliger.

During my stint as editor of this newsletter an even more interesting rumor appeared -- that Mr. Kenny was adapting the cartridge port component of his system to drive the Aerco interface with his own LKDOS. I promptly wrote to Mr. Kenny and did my best to egg him on in this project, assuring him that he would

sell at least ONE such card -- to me! He wrote back and told me that a good bit of interest had been expressed in the idea, and he was forging ahead with it.

In late September 1987 I got an announcement that the LKDOS cartridge was ready for sale. Unfortunately this was right in the middle of my relocation from Maryland to Georgia, and it was the midst of December before I got around to ordering one. In mid-January, the package came! Although Mr. Kenny penned a short apology for the delay, I thought that this was a very reasonable turnaround time for him, especially in view of the delays that often accompany mail that crosses the U.S./Canadian border.

The package contained a ten-page manual on LKDOS, a three-page supplement for the Aerco loadable version, a disk full of demonstration software and utilities, and the cartridge itself. This latter is a hardware-crammed board that just barely fits in the cartridge port with enough room to close the cover. After making one small modification to the Aerco disk interface (details to follow), you plug in the Larken board and miracles begin to happen! The disk drive now works in both Spectrum and 2068 modes, the 64K onboard Aerco ram is available to function as a ramdisk (people who have the 256K version can have FOUR ramdisks!), and you have new windowing and graphics capabilities to play with. You can generate disks that are compatible with users of Oliger, Ramex, Aerco, or Larken disk systems, if they also have the Larken LKDOS cartridge. This virtually unifies the disk-based 2068 user world, as long as they have made the investment in LKDOS. As a further bonus, the Aerco eprom can be replaced with a Spectrum rom or Zebra Systems' OS-64 eprom, if the user wishes to get away from Aerco DOS entirely.

The modification to the Aerco board  
Continued on Page 7

LKDOS-Continued from page 6

is a simple one, even to a certified member of the Hacker's Klutz Society like myself. Instructions in the manual supplement lead you to remove the plastic cover from the front of the interface. Be sure that you pry against the plastic and not against the circuit board, which is covered with copper foil tracery that is possible to damage! Then one is led to the fifteenth pin of the top row of the edge connector (counting from the left), where the NMI line is soldered directly in the form of a thin wire-wrap type of wire. This wire must be cut and an SPDT switch (I used Radio Shack part no. 275-613) spliced in. Actually, this is not quite as easy as it sounds, for said wire is only about an inch long. The best way to approach the task is to nip the existing wire where it solders onto pin 15, carefully strip the insulation off the end and extend it with another length of wire-wrap material. This kept me from having to solder directly onto an IC pin on the board, which makes me nervous! Then tapping into pin 15 on the back (feed-through) side of the board where there is more room to work, route the second wire to the front through one of the existing drill-holes on the board. The switch is then wired in, and the problem arises as to where to mount the switch. My kids use my 2068 a lot and it wouldn't do to just leave it hanging out of the circuit board. My solution was to build up the adhesive foam spacers that originally secured the front cover of the board, install the switch in a hole cut into the foam, and replace the protective front over the whole assembly. You can get a roll of adhesive foam stripping at any good hardware store. It is usually used for mounting light-weight pictures on the wall. You must cut off the bottom inch or so of the interface cover so that the edge connector can still fit into the back port of the 2068, but the back of the computer itself nicely fills this gap and protects the board from dust and children's fingers.

With the switch now in place you can selectively enable the NMI line and thus use AERCO DOS, or disable the NMI line, plug in the Larken cartridge, and use LKDOS. Herin lies the only real complaint that I have with Mr. Kenny's cartridge, and it is perhaps a minor one. If the user wants to be able to use both the Aerco and Larken DOS, the board must continually be inserted and removed from the cartridge port. Alas, the board is so tightly packed with components that it is difficult to remove once it is in place! Someone with arthritis in their fingers might find it impossible to do so. I am going to deal with this problem by converting my most often-used programs over to LKDOS so that I can have access to them in either system. However, it would be much better if somebody would figure out a way to wire a switch that would cut the cartridge port in or out of the 2068 system without removing the cartridge! Does anybody out there know if this is possible?

Mr. Kenny's manual includes instructions for adding the NMI "snapshot save" pushbutton circuit to the Aerco board. I am going to attempt this in the near future and will be sure to send you a report on it. Until then I'll simply conclude by saying that every Aerco disk interface owner who has an interest in getting Spectrum material on disk or moving beyond the limitations of the Aerco system should seriously consider the Larken cartridge. At \$65 for Spectrum compatibility, a ramdisk, a new and well-executed DOS, and several interesting and "do-able" optional hacks, it is a good investment indeed.

RECEIVED

NEW YORK : NEW JERSEY  
AREA TS 'FEST  
IN MAY

CATS 7 MARCH

## A VISIT TO THE STIPPLE by Mark Fisher

As I settled down to program my QL, I heaved a sigh... A high-res screen, and only eight colors to play with - oh well. And then, somewhere on page 12 of the Concepts section, was a mention of stipples. Well, I did a little experimentation, and COLORDEMO\_BAS is the result.

It consists of two procedures. "Cols" provides a display of all ink values possible, while "circles" is a more decorative program that randomly cycles through possible colors. The sequence of circles was originally developed for a Mandelbrot-plotting program that's still in development. You may notice that no circle is placed in the center of a previous circle, and the machine progresses toward covering the entire screen.

After typing and saving the programs (using the proc "savit"), run the routines either by typing "circles" or "cols". Be sure to try both routines in both four and eight color modes. Now, if I only had a color printer!  
MF

```

100 DEFine PROCEDURE cols
110   WINDOW 512,227,0,0: BORDER
2,2: PAPER 0: SCALE 225,0,0
120   CLS:inque=255
130   FOR y=220 TO 0 STEP -16
140     FOR x=0 TO 319 STEP 17
150       INK inque: inque=inque-1
160       FILL 1:CIRCLE x,y,7 : FILL
0
170     IF inque=0 THEN STOP
180     NEXT x
190   NEXT y
200 END DEFine
210 DEFine PROCEDURE circles
220   REMark graphics and color demo
230   WINDOW 512,227,0,0: BORDER
2,2: PAPER 0: CLS
240   WINDOW #0, 512,28,0,228 :
BORDER#0, 1,2 : INK#0,7 : CSIZE#0,
2,1:CLS#0
250   SCALE 225,0,0
260   REPEAT pgm
270     offset=RND (30)

```

```

280     i=225: INK i+offset: REMark
i= step size
290     FILL 1:CIRCLE 0,225,i/4:FILL
0
300     REPEAT loop
310       INK i+offset
320       PAPER #0, 0 :CLS#0 :PRINT
#0,'Ink ='; INT(i+offset);' - ';
330       PAPER #0, i+offset:
PRINT#0,'
340       flopy=1
350       FOR y=225 TO 0 STEP -i
360         flopx=flopy:flopy=NOT
flopy
370         FOR x=0 TO 319 STEP i
380           flopx=NOT flopx
400           IF flopx OR flopy

```

"Flopx" and "flopy" are variables that I use as logical operators. By alternately setting and re-setting them, the program is able to decide whether or not to place a circle at the current location on this pass.

```

420           FILL 1:CIRCLE
x,y,i/4: FILL 0
430         END IF
440       END FOR x
450     END FOR y
460     PAUSE i/3: LET j=i:LET
i=i/2
470     IF i<4 THEN EXIT loop
480   END REPEAT loop
490 END REPEAT pgm
500 END DEFine
560 DEFine PROCEDURE savit
570   SAVE mdv1_colordemo_bas
580 END DEFine

```

If you don't have Toolkit II, add a line:

```
565 DELETE mdv1_colordemo_bas.
```

"Savit" isn't a part of the demo routines, but it makes updating the program as you alter it easier.

**REMINDER**  
**MEETING IS 1ST SATURDAY**  
**MARCH 5**



```

160 AT 8,1:CSIZE 1,1
170 INPUT 'For date stamp type
mm/dd/yy; ENTER for no date'!a$
180 IF LEN(a$)>5
190  what_sep : REMark searches
string to find char used as
separator - returned as sep$
200  slice1=sep$ INSTR a$ : REMark
position of first seperator
210  slice2=slice1+(sep$ INSTR
a$(slice1+1 TO)) : REMark position
of seperator in remainder of a$
220  year= ('19'&a$(slice2+1 TO))
230  month=(a$(1 TO slice1-1))
240  day= (a$(slice1+1 TO
slice2-1))
250 AT 8,1: CLS 3: INPUT 'For
clock time, type hh/mm, ENTER for
elapsed ';a$
260  time: SDATE
year,month,day,hr,min,0

```

"Time" is a procedure that parses the time inputs, both for time and alarm setting.

```

270 OPEN#4,scr_60x20a451x236:
PAPER#4,32: INK#4,7: CLOCK#4 :
REMark sets up window for TKII
command CLOCK
280 AT 8,1: CLS 3: INPUT 'For
alarm, enter hh/mm. If not, press
ENTER ';a$
290  IF LEN (a$)>3
300  time
310  ALARM hr,min : REMark TKII
command
320  PRINT 'Alarm will ring at
'&hr&' hours,'&min&' minutes.'
330  END IF
340  END IF
350 CLOSE #1:CLOSE #2:WINDOW
#0,400,20,35,215
360 EXEC_W flp1_tquill
370 OPEN #1,scr:OPEN #2,scr

```

Lines 350 - 360 have also been lifted from the original BOOT program. It's line 370 that keeps functions such as INPUT and ED from working after you've QUIT the program. If you're using micro-drives, change line 360's flp to mdv (of course).

```

380 DEFine PROCedure what_sep
390  FOR i=1 TO LEN(a$)

```

```

400  IF a$(i)<'0' OR a$(i)>'9'
THEN EXIT i
410  END FOR i
420  LET sep=a$(i)
430  END DEFine
440 DEFine PROCedure time
450  IF LEN(a$)>3
460  what_sep
470  slice1=sep$ INSTR a$
480  hr=a$(1 TO
slice1-1):min=a$(slice1+1 TO)
490  ELSE
500  hr=0:min=0
510  END IF
520  END DEFine time
530 DEFine PROCedure savit
540  SAVE flp1_boot
550  END DEFine

```

Savit is luginappe - you really don't need it for proper operation of the program, but it makes backing the program up much easier - just type "savit" whenever you want to backup your program, to "lock in" a change to the boot program.

## Letters to the Editor (Continued)

Re 3" disk drives past Nov. (about 2 mo. ago). Gateway Electronics, 8123 Page Blvd., St. Louis, MO 63130, (314) 427-6116 sent Vern Tidwell manual for Hitachi HFD 3055 disk drives they had. Vern says they appeared to be fine for my Zebra drive system. I talked to Gateway in late Oct.-45 sets then at \$90.00 for 2 in cabinet with power supply. Unused-intended for Atari 400, 800, & XL computers. \$5.00 for shipping. Single drive, less case & power supply \$40. If CATS not interested in group buy, please at least publish info. I am devoted to my Zdrive-want no floppies.

Joan Kealy

Joan, CATS will not be having a group buy of 3" disks; however, glad to pass the info along.

Ed.

the PLOTTER-Continued from page 4

```

460 CYCLOID A:A=A+A_I:R3=R3+R3_I
470 END FOR I
480 END DEFINE PATTERN
490 REMark *****
500 DEFINE PROCEDURE CYCLOID(A)
510 A1=A:A2=0
520 IF V
530 LINE
(CR+R3)*COS(A1),(CR+R3)*SIN(A1)
540 ELSE
550 MA
INT(1.92*(CR+R3)*COS(A1)+.5),INT(1.-
92*(CR+R3)*SIN(A1)+.5)
560 END IF
570 REPEAT LOOP
580 A1=(A1+A1_I)
590
A1=A1*(A1<2*PI)+(A1-2*PI)*(A1>=2*PI)
600 CX=CR*COS(A1):CY=CR*SIN(A1)
610 A2=A2+A2_I
620 IF A2>A1:A2=A2-2*PI:END IF
630 A3=(A1-A2)
640
A3=A3*(A3<2*PI)+(A3-2*PI)*(A3>=2*PI)
650 X_I=R3*COS(A3):Y_I=R3*SIN(A3)
660 IF V
670 LINE TO CX+X_I,CY+Y_I
680 ELSE
690 DA
INT(1.92*(CX+X_I)+.5),INT(1.92*(CY+
Y_I)+.5)
700 END IF
710 AA=INT(1000*A)
720 IF INT(1000*A1)=AA AND
INT(1000*A3)=AA:EXIT LOOP:END IF
730 END REPEAT LOOP
740 END DEFINE CYCLOID
750 REMark *****
760 DEFINE PROCEDURE LONG_PLOT
770 REMark C=3:OPEN#C,SER2
780 GR 251,10,600,3
790 MA 2510,0:INI:DF:MA 54,0:OR1
800 GR 251,9,600,3
810 REMark CLOSE#C
820 END DEFINE LONG_PLOT
830 REMark *****
840 DEFINE PROCEDURE PLOT_FILE
850 C=3
860 OPEN_NEW#C,FLP1_SCREEN_PLT
870 REMark *** PROGRAM WITH PLOTTER
COMMANDS ***
880 LONG_PLOT
890 CLOSE#C
900 REMark TO PLOT THE FILE USE:COPY
FLP1_SCREEN_PLT TO SER2
910 END DEFINE PLOT_FILE

```

```

920 REMark *****
930 DEFINE PROCEDURE
MA(X,Y):PRINT#C,'MA ','X;',',','Y:END
DEFINE
940 DEFINE PROCEDURE GR(XU,XN,YU,YN)
950 PRINT #C,'GR
','XU;',',','XN;',',','YU;',',','YN
960 END DEFINE GR
970 DEFINE PROCEDURE INI:PRINT#C,'IN
':END DEFINE
980 DEFINE PROCEDURE
DF:PRINT#C,'DF':END DEFINE
990 DEFINE PROCEDURE
OR1:PRINT#C,'OR':END DEFINE
1000 DEFINE PROCEDURE
DA(X,Y):PRINT#C,'DA ','X;',',','Y:END
DEFINE
1010 DEFINE PROCEDURE CH:PRINT#C,'CH
':END DEFINE

```

### NEWSLETTER SUBMISSIONS

Submissions for the newsletter can be in hard copy, with columns 35 characters wide, or, preferably, magnetic media. For the QL, microdrive cartridge, 5 1/4" DS/DD or Quad density disks, or 3 1/2" disks. For the 2XB1, TS1000, or 2068, cassettes only, with titles on the box.

Send material to:  
 Editor, CATS Newsletter  
 Box 467  
 Fairfax Station, VA 22039

### ADVERTISING INFORMATION

C.A.T.S. will run one free 1/4 page "commercial" ad per one year full (\$18) membership. Non-commercial ads may be submitted at any time. Publication dates for both types will be determined by the newsletter editor.

### Advertising Rates

Full page \$25; 1/2 page \$15;  
 1/4 page \$10; 2" x 2 1/2" \$7

# CLASSIFIED ADS

**FOR SALE** Byte Back modem for 2068,  
\$50. Harvey Altergott,  
(301) 376-3347.

**FOR SALE** Koala graphics tablet \$30  
Silver Reed EX34 typewriter/  
daisy wheel printer \$160  
{Has standard parallel port  
and uses Quill driver}  
Price includes 2 extra  
print wheels and 6 ribbons  
300 baud modem for QL \$20  
TS 2040 printer \$20  
16K rampacks {3 left} \$7 ea

**QL keyboard membranes \$17**

**ZX3001 chips \$17.50**

Prices are PLUS shipping  
Vernon Smith (703) 978-1835  
or via CATS P.O. box

## WANTED!

ANY HARDWARE/SOFTWARE COMPATIBLE  
WITH TS1000/1500. WOULD PREFER  
ALL ITEMS WITH INSTRUCTIONS OR  
DIAGRAMS. I AM ALSO LOOKING FOR  
TIMEX/SINCLAIR AND RELATED MAGA-  
ZINES (LIKE CTM) AND BOOKS. IF  
YOU HAVE ANY ITEMS FOR SALE OR  
DISPOSAL, PLEASE CONTACT ME.

TED OSHEROFF  
P.O. Box 392  
COLLEGE PARK, MD 20740-0392

**WANTED: 512 Expansion RAM for QL**  
Charles Smith, 20021 Choctaw Ct.  
Germantown, MD 20874-301 972-5205

## Plot3

Concluded from last month's "the Plotter" column

```
670 DEFine PROCEDURE side
(size,level)
680 IF level=0 THEN P_MOVE
size:RETurn
690 side size/3,level-1:P_TURN -60
700 side size/3,level-1:P_TURN 120
710 side size/3,level-1:P_TURN -60
720 side size/3,level-1
730 END DEFine side
740 REMark *****
750 DEFine PROCEDURE CEE
760 SCALE 1920,-1000,-1400:POINT 0,0
770 P_TURNT0 -90
780 MA 600,1400
790 C1 40,10
800 END DEFine CEE
810 REMark *****
820 DEFine PROCEDURE C1(size,level)
```

```
830 IF level=0 THEN P_MOVE
size:RETurn
840 C1 size,level-1:P_TURN 90
850 C1 size,level-1:P_TURN -90
860 END DEFine C1
870 REMark *****
880 DEFine PROCEDURE SIERPINSKI
(side,level)
890 SCALE 1920,-500,-20:POINT
0,0:P_TURNT0 0
900 MA 250,10
910 diag=side/SQRT(2)
920 FOR count=1 TO 4
930 one_side side,diag,level
940 P_TURN 45:P_MOVE diag:P_TURN 45
950 END FOR count
960 END DEFine SIERPINSKI
970 REMark *****
980 DEFine PROCEDURE one_side
(side,diag,level)
990 IF level=0 THEN RETURN
1000 one_side side,diag,level-1
1010 P_TURN 45:P_MOVE diag:P_TURN 45
1020 one_side side,diag,level-1
1030 P_TURN -90:P_MOVE side:P_TURN
-90
1040 one_side side,diag,level-1
1050 P_TURN 45:P_MOVE diag:P_TURN 45
1060 one_side side,diag,level-1
1070 END DEFine one_side
1080 REMark *****
1090 DEFine PROCEDURE P_MOVE(DIST)
1100 MOVE DIST
1110 DR
INT(DIST*COS(BETA)+.5),INT(DIST*SIN-
(BETA)+.5)
1120 END DEFine P_MOVE
1130 REMark *****
1140 DEFine PROCEDURE P_TURN(ALFA)
1150 TURN ALFA
1160 BETA=BETA+RAD(ALFA)
1170
BETA=(INT(BETA)>=2*PI)*(BETA-2*PI)+-
(INT(BETA)<2*PI)*BETA
1180 END DEFine P_TURN
1190 REMark *****
1200 DEFine PROCEDURE P_TURNT0(ALFA)
1210 TURNT0 ALFA
1220 BETA=RAD(ALFA)
1230
BETA=(INT(BETA)>=2*PI)*(BETA-2*PI)+-
(INT(BETA)<2*PI)*BETA
1240 END DEFine P_TURNT0
```

**CATS II MARCH**

02X 085: (505) 522-7081 F100 net  
 15, node 6, East Coast dial (703)  
 541-4815 F100 net 18, node 9.

TimeX SIG on CompuServe: Wednes-  
 day night, 10 P.M. Eastern time  
 (60 CLUB).

**Networks**

Memberships cost \$18 per year,  
 are good for 12 months, and in-  
 clude all privileges (access to  
 libraries, group buys, etc.).  
 A newsletter subscription only  
 is available for \$12 per year.

**Newsletter**

Monthly meetings are held from  
 11 AM to 5 PM, on the second Sat-  
 urday of each month, at the New  
 Carrollton Public Library.

**Meetings**

CATS maintains a gratis exchange  
 of newsletters with approximately  
 30 users groups across the U.S.  
 Clubs not sending a net to us for  
 six months are automatically  
 taken off the list.

Editor & contact person  
 Vernon Smith  
 Bob Cornutt  
 Bill Garnhart  
 Mark Fisher  
 Ruth Feigley  
 Mike Warnick  
 George Rey  
 Hank Dickson  
 Tom Bent

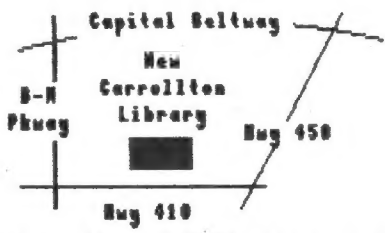
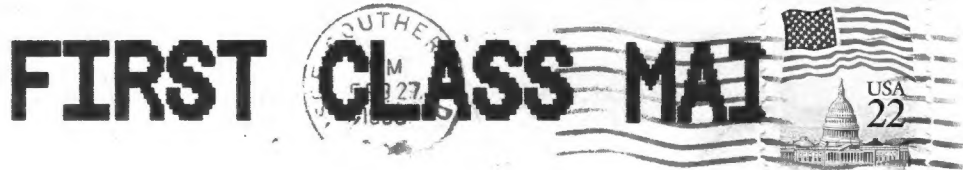
**Executive Board**

President  
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 2nd Vice President  
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**Users Group**

The Capital Area Times Sinclair

CATS Newsletter  
 P.O. Box 467  
 Fairfax Station, VA 22039



The next meeting of CATS will be held on:  
 Saturday, March 5, 1988 11:00 AM Hardware Meeting  
 2:00 PM General Meeting

At: New Carrollton Public Library  
 7414 Riverdale Road (Hwy 410), New Carrollton, MD

IF YOU ARE NOT A MEMBER OF CATS, THIS IS THE ONLY ISSUE YOU WILL RECEIVE

DUES: \$18 per year, per family

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 Donald S. Lambert  
 3310 Clover Dr. S.W.  
 Cedar Rapids IA 52404